REMARKS

Favorable reconsideration of this application is respectfully requested in light of the following remarks wherein, Claim 26 is amended and no claim is canceled or added. Currently, Claims 2-10 and 26 are pending in the present application.

Summary of Examiner Interview

As an initial matter, Applicants express gratitude to Examiner Weeks for the courtesies granted Applicants' attorney during the recent interview. During the interview, Applicants discussed the differences between the claimed invention and the prior art. Specifically, Applicants explained that although Fujikawa mentioned a variable displacement type hydraulic pump, the power of the mining actuator connected to the hydraulic circuit is controlled by the valves within the system, and not adjustment of the pumping output. The Examiner alleged that the claims are directed to a system (apparatus) and not a method. The Examiner further alleged that the limitations are taught by the variable displacement type hydraulic pump having the capability to adjust pump output. Applicants further proposed adding a limitation to Claim 26 such that no external hydraulic components other than a hydraulic pump would be included in the hydraulic circuit to adjust the flow and pressure. The Examiner's supervisor was contacted during the interview, and mentioned that this would likely be new matter, even in light of the explicit support on page 2, paragraph 9 of the original Specification. The Examiner did agree that, absent the new matter concern, the claim amendment should overcome the cited prior art. Claim 26 has been amended in accordance with that agreement.

Support for Claim Amendments

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: the original claims and the specification, page 3, paragraph 9. Specifically, paragraph 9 of the specification recites "no external hydraulic components other than a hydraulic pump are required in the pressure fluid channels of the separate hydraulic circuit for adjusting the flow and the pressure." It was raised in the telephone interview that this statement may not provide adequate support for the new phrase recited in claim 26, because the specification refers to no external hydraulic components in relation to whether they are required and not whether they are present in the system. This distinction does not prevent the specification from providing adequate support for the amended claim. Stating that certain components are not required, would have been understood by one of ordinary skill in the art to provide support for at least two embodiments. One embodiment in which there are hydraulic components, and one embodiment in which there are no hydraulic components. Further, Applicants are allowed to claim certain embodiments, while not claiming other embodiments. Therefore, the arguably broader recitation that "no external hydraulic components are required" provides adequate support for "no external hydraulic components."

Rejections under 35 U.S.C. § 103

Claims 1-10 and 26 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious over U.S. Patent No. 4,356,871 to Fujikawa ("*Fujikawa*") in view of U.S. Patent No. 4,132,506 to Dantigraber ("*Dantigraber*"). Note that the Examiner clarified in the telephone interview that mention of *Dantigraber* in the rejection was a mistake, and that the rejection of record should

include U.S. Patent No. 5,449,047 to Schivley et al. ("*Schivley*") as the secondary reference in place of *Dantigraber*.

Claim 26 now at least recites "wherein there are no external hydraulic components other than a hydraulic pump in the pressure fluid channels of the separate hydraulic circuit for adjusting the flow and the pressure." Neither *Fujikawa* nor *Schivley* appear to disclose at least this element of claim 26, especially in combination with the other elements of claim 26.

In particular, *Fujikawa* teaches away from the system of claim 26. The MPEP notes that a combination of references resulting in a prior art reference being unsatisfactory for its intended purpose is improper. *See*, MPEP § 2143.01. *Fujikawa* requires a system of valves, especially pressure reducing valves (44, 45), in the feed circuit (11) to control pressure and flow. *Fujikawa* discloses in one sentence within the description that a variable displacement type hydraulic pump 10 can be used in the hydraulic circuit. However, *Fujikawa* goes on to disclose that there are several valves in the feed circuit (11), by means of which the power of the feed actuator (15) is adjusted. Specifically, in Figure 2, there is a selector valve (12) and two pressure reducing valves (44, 45) in the feed circuit (11). The feed circuit (11) is also provided with a relief valve 16. These valves (12, 16, 44, 45) in the feed circuit are used for controlling the power of the feed actuator (15), with at least some of the valves adjusting the flow and pressure within the pressure fluid channels.

Any proposed modification of *Fujikawa* to remove the valves from the system would render *Fujikawa* unsatisfactory for its intended purpose of controlling actuators. This is at least because *Fujikawa* controls the actuators by adjusting the valves within the pressure fluid channels. In contrast, the claimed invention requires no external hydraulic components other

than a hydraulic pump in the pressure fluid channels of the separate hydraulic circuit for adjusting the flow and the pressure.

Additionally, claim 26 recites "the power of the mining actuator connected to the separate hydraulic circuit is arranged to be adjusted by adjusting the generated hydraulic power by adjusting pumping output of the hydraulic pump of the separate hydraulic circuit." At least this element is not disclosed in *Fujikawa* or *Schivley*. Specifically, *Fujikawa* contains valves in the system to control power of the feed actuator. *Fujikawa* is silent to adjusting pumping output to control power of the feed actuator. It would not have been obvious to adjust pumping output to control power in *Fujikawa*, at least because the system already includes valves for that purpose. Although in some circumstances it can be found to be obvious to combine multiple ways of accomplishing a purpose, this is typically because it would have been expected that the combination would further improve the overall system. In contrast, controlling power of the actuator by both valves and adjusting pumping output adds complexity to the system, without any expected advantage. The control system would have to coordinate how much to adjust the valves in relation to the adjustment pumping output and in relation to the required pressure or flow for the actuator. This added complexity would provide a system with no added capability with regard to controlling the actuator. This is why *Fujikawa* in mentioning a variable displacement pump clearly indicates that the pump is not adjusted during operation, when valves are used to control flow and pressure of hydraulic fluid.

In contrast, Applicants have discovered that by adjusting flow and pressure only by adjusting a hydraulic pump all other hydraulic components for adjusting flow and pressure such as valves, can be removed from the system. *See, e.g.*, p. 2, para. 9. Not having any other

hydraulic components prevents the power losses caused by such components. *See, e.g.*, p. 2, para. 9.

Moreover, as conceded by the Examiner, *Fujikawa* fails to disclose that the hydraulic system is provided with a sensor for monitoring the pressure of the fluid channel leading to the mining actuator. Nevertheless, the Examiner seeks to rely upon *Schivley* for disclosing this feature. Applicants note that *Schivley* was relied upon for similar reasons in a previous rejection with a different primary reference. The combination was overcome for reasons similar to why this combination also fails.

Schivley discloses an electro-hydraulic system (*see, e.g.*, col. 4 l. 9), which includes a control system based on an electrical controller (100) such as a microprocessor (*see, e.g.*, col. 4, l. 17-27). The hydraulic system of *Fujikawa* is purely hydraulic and is without any electronic control devices. Therefore, it would not have been obvious to combine the teaching of *Schivley* with the teaching of *Fujikawa*. Furthermore, a person skilled in the art would still not have the needed knowledge to really modify the hydraulic circuit of *Fujikawa* having several separate hydraulic circuits since *Schivley* relates to a totally differently constructed hydraulic circuit. The suggested combination is not a straightforward situation, but it would have required several constructional modifications.

Moreover, *Schivley* discloses pressure sensors (110, 114, 116), a vibration sensor (112) and a rotation sensor (70). However, nowhere in *Schivley* is disclosed that information on the volume flow obtained from the hydraulic pump is monitored. Thus, even if *Fujikawa* and *Schivley* were combined, the combination would still not include the following features of Claim 26:

> the information on the volume flow obtained from the hydraulic pump of the separate hydraulic circuit is monitored,
>
> and the power of the mining actuator of the rock drilling machine is

controlled according to the pressure and flow information and the adjustment strategy.

Accordingly, neither *Fujikawa* nor *Schivley*, in combination or alone, disclose the patentable features of independent Claim 26.

For at least the foregoing reasons, it is submitted that the system of independent Claim 26, and the claims depending therefrom, are patentably distinguishable from the applied documents. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Conclusion

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

Date: July 27, 2010 By: _____

Christopher P. Bruenjes
Reg. No. 62,941
Attorney for Applicants
Tel. No.: (202) 230-5162
Fax No.: (202) 842-8465

DRINKER BIDDLE & REATH LLP
Customer No. 55694
1500 K Street, N.W., Suite 1100
Washington, D.C. 20005-1209
Tel. No.: 202-842-8800
CPB:mk